



# STATE OF UTAH

## CONTRACT AMENDMENT

AMENDMENT # 2 To CONTRACT # 029131

TO BE ATTACHED TO AND MADE A PART OF the above numbered contract by and between the State of Utah, Transportation, referred to as STATE and, Dye Management Group Inc., referred to as CONTRACTOR.

### THE PARTIES AGREE TO AMEND THE CONTRACT AS FOLLOWS:

1. **Contract period:**

NO Change (original starting date)

No Change (current ending date)

12/31/05 **new ending date**

2. **Contract amount:**

\$426,100.00 (current contract amount)

\$73,486.00 (amendment amount)

\$499,586.00 **new contract amount**  
(add current amount to amendment amount)

3. **Other changes:** (attach other sheets if necessary):

**The Contract now reads:**

Time and Material contract to provide Professional Management Consulting Services, for additional data analysis and interpretation resulting from the Initial Audit.

**The Contract is amend to read:**

Performance Review of Electronic Collaboration and Information Sharing with Engineering Partners- (See attached scope of work). Also to Exercise Renewal Optional.

4. **Effective Date of Amendment:** October 01, 2004

All other conditions and terms in the original contract and previous amendments remain the same.

IN WITNESS WHEREOF, the parties sign and cause the amendment to be executed.

**CONTRACTOR**

[Signature]  
Contractor's signature

William H. Bye, President  
Type or Print Name and Title

**STATE**

[Signature]  
Jim McMinimee, Project Development Director

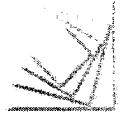
[Signature]  
Director, Division of Purchasing

[Signature]  
Director, Division of Finance

NOV 04 2004

DYE MANAGEMENT GROUP, INC.

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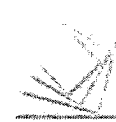
Utah Department of Transportation

# **Performance Review of Electronic Collaboration and Information Sharing With Engineering Partners**

September 29, 2004

**DYE MANAGEMENT GROUP, INC.**

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September 29, 2004

Mr. Jim McNinimee  
Utah Department of Transportation  
4501 S. 2700 W. Box 148380  
Salt Lake City, UT 84114-8380

Dear Jim:

We very much appreciated the opportunity to spend some time with you and Stan Burns discussing your objective to enhance electronic information sharing between the Utah Department of Transportation (UDOT) and its engineering consultants. In follow-up to our conversations, please find attached an updated draft scope of work to assist UDOT in conducting a review of its current tools and processes for collaborating with and sharing information electronically with external engineering consultants. The scope of this review will include a confirmation of the extent and effectiveness of existing electronic information sharing, a review of best practices nationally in this area among transportation agencies and engineering firms and an assessment of UDOT's environment against these best practices. In addition, we will develop detailed recommendations for steps UDOT can take to improve collaboration with its engineering partners during the project delivery process and a high level work plan for implementing these recommendations.

To conduct this review, Dye Management Group, Inc. will leverage its existing best practices database, which we have developed through our project delivery process improvement work with more than six states and the U.S. Department of Transportation, Federal Highway Administration (FHWA) over the last two years. In addition, the senior team we have assembled has the following experience:

- Recently conducted a similar best practices review and assessment for the Colorado Department of Transportation (CDOT).
- Worked with Arizona, North Carolina, Kentucky, Oregon, and FHWA's Federal Lands Highway Division, among others, on project delivery process improvement projects.
- Conducted best practice reviews for multiple transportation agencies.
- Participated in a number of previous UDOT performance audit engagements, which provides knowledge of UDOT's environment.

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If you have any questions, or require additional information or clarification during your review of this proposal, please feel free to contact Robert Cooney at (919) 518-2080 or myself at (425) 637-8010.

Once again, thank you for the opportunity to submit our proposal. We are excited about the potential opportunity to assist you with this project.

With best regards,

DYE MANAGEMENT GROUP, INC.

A handwritten signature in black ink, appearing to read 'W. Dye', with a stylized flourish at the end.

William Dye  
President

**Utah Department of Transportation**  
**Performance Review of Electronic Collaboration and Information**  
**Sharing With Engineering Partners**

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## I. Technical Approach



This section presents a summary of our understanding of the scope of the proposed review and our suggested technical approach, project organization, project schedule, and staff loading for executing the work.

### A. Our Understanding

A streamlined flow of information between the various stakeholders involved in the Utah Department of Transportation (UDOT) project delivery process is extremely critical to ensuring the overall efficiency of the process. Effective electronic collaboration between stakeholders both internal and external to the department provides better project status information for management, allows for easier sharing of design data, significantly reduces redundant and/or manual effort on the part of various stakeholders and drives reduced administrative costs for both UDOT and its engineering partners.

This effective electronic collaboration and sharing of data is all the more critical given the hybrid nature of project teams; it is common for in-house units to perform some work on projects while external engineering consultants perform other work. For example, UDOT staff could perform bridge design or hydraulics work on a project while an engineering consultant works on the roadway design. Conversely, the roadway design could be performed in-house with specialty work such as bridge, hydraulics, and geotechnical being outsourced.

In light of the importance of effective collaboration and information sharing among all project team members, UDOT has been evaluating the potential for increasing electronic collaboration and data sharing between UDOT and its consultant engineering partners.

Following are the four key objectives of this study:

- Conduct a high spot review of the current processes for sharing information between UDOT and its engineering consultants.
- Identify best practices nationally in this area among other state transportation agencies and private engineering firms.
- Compare UDOT's present environment against these best practices.
- Identify potential opportunities for improving electronic collaboration and data sharing between UDOT and its engineering consultant partners.

### B. Proposed Project Approach

Dye Management Group, Inc. has defined a project approach that leverages our best practices database built through project delivery process improvement work with more than six states and the FHWA over the last two years. In addition, we have proposed an experienced team that has recently addressed similar issues for other clients. For example, Robert Cooney, our proposed project manager, has recently conducted a similar best practices review and assessment for CDOT. In addition, our team includes staff with significant experience with project delivery process improvement, best practices reviews and knowledge of the UDOT environment.

Our proposed project approach consists of the following tasks:

- Task 1: Initiate Project
- Task 2: Establish Baseline of Current Environment and Identify Desired Business Objectives
- Task 3: Benchmark UDOT Operations and Objectives Against Best Practices
- Task 4: Develop Detailed Recommendations
- Task 5: Prepare Implementation Plan
- Task 6: Perform Project Management

Each of these tasks is described in further detail below.

### **1. Task 1: Initiate Project**

The Dye Management Group, Inc. team will develop a draft detailed work plan for review with the UDOT staff. The Dye Management Group, Inc. team will also conduct a project initiation meeting with UDOT to review the draft work plan and then make any updates to the work plan based on UDOT's comments during the project initiation meeting.

The key deliverable of this task will be sign-off on the detailed work plan.

### **2. Task 2: Establish Baseline of Current Environment and Identify Desired Business Objectives**

The Dye Management Group, Inc. team will achieve a baseline understanding of the existing UDOT project delivery technical environment and identify the department's current business objectives in terms of enhanced electronic integration between UDOT and its engineering partners. The team will do this by performing the following activities:

- Reviewing existing UDOT documentation (such as user manuals) including current contractor automation such as the Project Development Business System.

- Conducting up to eight (8) detailed interviews with UDOT staff to understand the current processes (and supporting tools) by which UDOT Project delivery staff collaborate and share information with its consultant engineering partners.
- Conducting an e-mail based survey of consultant engineering partners to understand both engineering firm current capabilities for and their views of electronic data sharing. The list of engineering firms to be included in the survey will be provided by UDOT.
- Conducting detailed interviews as a supplement to the survey with at least eight (8) consultant engineering firms or with representatives of the Utah Chapter of the American Consulting Engineers Council (ACEC) or other consultant organizations suggested by UDOT. It is anticipated that these interviews will be with staff in a cross section of roles (management, business, technical) within the engineering partners.

In addition, during this task, the Dye Management Group, Inc. team will review its own internal databases and vendor product literature, and contact vendor representatives as necessary to understand the electronic collaboration capabilities available or planned in the near future and to understand other software currently licensed by UDOT.

The key deliverables of this task will be the documentation review and the detailed interviews with UDOT, survey results from the survey of external engineering partners, detailed interviews with engineering partners and information gathering with software vendors as appropriate.

### **3. Task 3: Benchmark UDOT Operations and Objectives Against Best Practices**

In this activity, the Dye Management Group, Inc. team will review best practices among state transportation agencies and other public sector organizations, as well as major engineering firms and then benchmark UDOT's current operations and proposed business objectives against these best practices. The activities to be performed during this task include the following:

#### **a. Review Transportation Agency Best Practices**

The Dye Management Group, Inc. team will review best practices nationally among state transportation agencies or other public sector organizations focused on capital programs (such as the U.S. Army Corp of Engineers and large airport authorities), focusing on electronic collaboration and data sharing with engineering partners. Our team will also review our best practices database and conduct a brief secondary search using a variety of sources such as AASHTO, HEEP, and engineering software user groups. Leveraging our



database of best practices, which was built from prior engagements, the Dye Management Group, Inc. team then will identify a target list of candidate states and review this list with UDOT. A list of eight candidate states to be interviewed in detail will then be finalized.

In parallel with the selection of candidate transportation agencies, the Dye Management Group, Inc. team will develop a structured interview questionnaire. This questionnaire will be e-mailed to the identified contacts in each of the eight state departments of transportation or other agencies. Dye Management Group, Inc. team members will then follow up by telephone to schedule and conduct the interview. As part of the interview, the team will gather any appropriate documentation that the agency may have available.

The primary deliverable of this task will be the conduct of eight best practice interviews/discussions with transportation or other appropriate agencies.

**b. Review Engineering Firm Best Practices Nationally**

By leveraging our existing best practices database, the Dye Management Group, Inc. team will identify up to four large multi-office engineering firms with whom to discuss processes, tools, and techniques being used to support collaboration among team members across multiple locations. The Dye Management Group, Inc. team will develop an initial list of firms to interview and will discuss this list with UDOT. The Dye Management Group, Inc. team will then develop a structured questionnaire that will be e-mailed to the identified contacts in each of the four engineering firms. Team members will then follow up by telephone to schedule and conduct the interview. As part of the interview, the team will gather any appropriate documentation that is available.

The primary deliverable of this task will be the conduct of four best practice interviews/discussions with large multi-location engineering firms.

**c. Document Best Practices and Conduct Best Practices Briefing**

The Dye Management Group, Inc. team will synthesize the information obtained from the best practices review and prepare a findings report containing both a summary of key trends and three to four detailed case studies. The team will then prepare and conduct a best practices briefing for UDOT management.

**d. Benchmark UDOT Operations and Objectives Against Best Practices**

The Dye Management Group, Inc. team will benchmark UDOT's current operations and proposed business objectives against best practices nationally.

The team will assess how UDOT stands in comparison to best practices and present the results of this assessment and a list of potential opportunities to UDOT management.

The primary deliverables of this task will be a best practices summary report, best practices briefing for UDOT management and a benchmark analysis report of UDOT operations and objectives against best practice.

#### **4. Task 4: Develop Recommendations**

Based on the analysis in the previous tasks, the Dye Management Group, Inc. team will develop a list of specific, actionable recommendations which UDOT can implement to enhance electronic information sharing and collaboration with external engineering partners. These recommendations will be detailed out at a level of specificity to allow UDOT to fully understand the extent of the proposed recommendation and the steps which would be required to implement the recommendation.

The primary deliverables in this task will be a detailed list of recommendations and a management briefing for UDOT on these proposed recommendations.

#### **5. Task 5: Prepare Implementation Plan**

In this task, the Dye Management Group, Inc. team will prepare a high level implementation plan for the proposed recommendations. This plan will detail the required sequence of activities and targeted timeframes for implementing any recommendations. The Dye Management Group, Inc. team will also provide high-level cost estimates and a high level cost/benefit analysis for implementing the recommendations as part of this plan. To the extent possible, this implementation plan will address implementation activities, costs and benefits from the perspective of both UDOT and its engineering partners. In addition, the implementation plan will include suggested activities for presenting the recommendations and the cost/benefit of these recommendations to UDOT's engineering partners.

The primary deliverable in this task will be the implementation plan.

#### **6. Task 6: Prepare Final Report and Conduct Management Briefing.**

During this activity, the Dye Management Group, Inc. team will prepare the draft and final report. This report will represent a consolidation and packaging of the items presented to UDOT as deliverables in the other tasks.

The Dye Management Group, Inc. team will initially present this report as a draft for UDOT review and comments. The team will then present a final report incorporating UDOT's comments.

Following delivery of the final report, Dye Management Group, Inc. will conduct a final management briefing with UDOT management and, at the option of UDOT, also conduct a briefing with members of the engineering consulting community.

## 7. Task 7: Perform Project Management

Project management activities will span all other activities/tasks of the project. The primary activities of this task include:

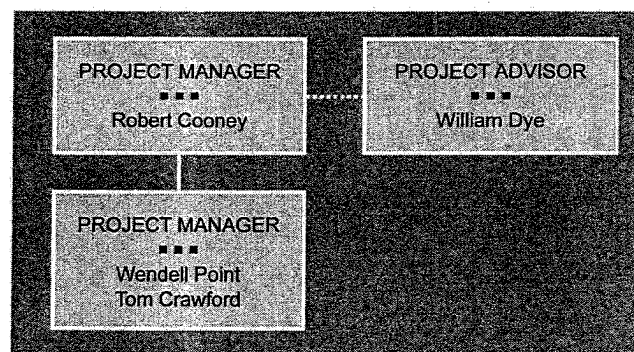
- Ongoing management and monitoring of the project work plan.
- Identification and resolution of any project issues.
- Preparation of a biweekly status report.
- General contract management activities including the submission of invoices, etc.

The primary deliverable of this task will be the updated project work plan and the biweekly status reports submitted to UDOT management.

## C. Proposed Project Organization

Dye Management Group, Inc. has proposed a senior team to conduct this review. The team brings specific experience with engineering collaboration and data sharing from our work in Colorado, strong experience with project delivery process improvement efforts and best practices from work in a number of states, and knowledge of the UDOT environment from past engagements. Exhibit I-1: Proposed Project Organization illustrates our proposed project organization for this project.

**Exhibit I-1: Proposed Project Organization**



The roles and responsibilities of each project team member and a summary of their qualifications is provided below.

### 1. Robert Cooney, Project Manager

## DYE MANAGEMENT GROUP, INC.

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As project manager, Mr. Cooney will be responsible for managing all project activities. Mr. Cooney will also serve as the principal point of contact with UDOT for this work.

Mr. Cooney, a vice president with Dye Management Group, Inc., has 17 years of experience, including more than 10 years of experience in managing business improvement and technology projects for transportation agencies. Mr. Cooney has a solid understanding of project delivery processes including the technology supporting the project delivery process. He also has significant experience conducting best practices reviews and assessments around project delivery processes. His experience most directly relevant to this proposed review includes the following:

- Project director for a detailed assessment of the CDOT project development systems. The scope of the project included reviewing existing business processes in addition to application systems in all areas of the project development and delivery lifecycle (plan, design, build, and maintain), defining detailed user requirements in each business area, comparing against best practices nationally, and developing a series of strategic recommendations for enhancing CDOT's application systems in support of its project development activities.
- Project advisor for CDOT's ongoing engineering software transition. In this role, Mr. Cooney is leading implementation of the organizational change management and communications program, and providing guidance to the CDOT project director and steering committee for this initiative to streamline and standardize project delivery processes, and deploy new design and CAD software statewide. This project is a result of recommendations made during the project development systems assessment.
- Project manager for the development of a management information systems strategic plan for the U.S. Department of Transportation, Federal Highway Administration, Federal Lands Highway Division (FLH). The project scope included reviewing current "as is" application systems; conducting detailed interviews of users at all levels within FLH to define information requirements; reviewing best practices nationally, benchmarking FLH against these best practices, and defining and analyzing alternatives for improving information systems across FLH in support of business requirements; and developing a detailed implementation plan.
- Project manager for a project delivery study of the North Carolina Department of Transportation. The objective of the study was to analyze, assess, and quantify the extent of project delay in North Carolina. The study, which included a significant best practices review and benchmarking component, covered all aspects of project delivery from project definition, planning, project development, and design, through construction.
- Project manager of a comprehensive management review of the Kentucky

Transportation Cabinet (KYTC) for the Kentucky General Assembly. The scope of work for this project included a review of project delivery practices in Kentucky and a comprehensive benchmarking of KYTC operations against best practices nationally.

- Project Manager for assisting FLH with their project delivery customer satisfaction surveys. The scope of effort included compiling and analyzing results, preparing summary reports, and developing recommendations for management action based on the survey results. The scope of work included the program administration survey for partner agencies and FLH offices; the project development survey, which is completed by partner agencies and other interested external parties at the completion of the design phase; the completed project survey, which is completed by partner agencies and other interested parties at the end of the construction phase; and a new environmental streamlining survey.
- Senior advisor for the design and development of Mississippi's Transportation Management Information System (TMIS).
- Project director for the design and development of AASHTO SiteManager™ software, which involved coordinating participation by staff from 18 state departments of transportation and the Federal Highway Administration (FHWA). The scope of this project included the definition of best practices through multi-state design workshops and the subsequent integration of these best practices into the system design, the design and development of the SiteManager™ software, and the implementation on a pilot basis of the software into two beta testing states (Texas and Virginia). The scope of the project also included development of change management guidelines and detailed user procedures, and training material to be used by states implementing the software.
- Project director for the design and development of a Construction Documentation System (CDS) for the Pennsylvania Department of Transportation (PennDOT). Designed to integrate with PennDOT's existing contracts management system, CDS captures and maintains the daily diary and daily work records on each construction project.
- Project director for two large, multi-national ERP implementations, as well as for financial system implementations at New Jersey Transit, New Jersey Highway Authority, and the New York MTA.
- Manager of the Application Development Support Center at the North Carolina Department of Transportation for two years.

## 2. William Dye, Project Advisor

Mr. William Dye will serve as a project advisor. In this role, he will provide the other team members with guidance and insight as appropriate, leveraging his

## DYE MANAGEMENT GROUP, INC.

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understanding of UDOT's environment.

Mr. Dye is the founder and chief executive officer of Dye Management Group, Inc. He has more than 20 years of experience working with transportation and other public sector agencies on mission critical business and technology initiatives. A sampling of his experience includes the following:

- Project director for a series of performance audits and other related engagements conducted for UDOT including areas of maintenance, programming and project selection, cost allocation, and project management.
- Quality assurance advisor for a project development systems assessment for CDOT.
- Quality assurance advisor for development of a Management Information Systems (MIS) Plan for FLH.
- Directed management review of the construction and maintenance program for the Oregon Department of Transportation (ODOT). Completed an assessment of performance that included internal and external benchmarking.
- Directed performance review and implementation assistance for ODOT's Unified Work Program.
- Provided quality assurance for a series of project management audits for the King County, Wash., Department of Transportation, Roads Division. These included a management review, project delivery assessment, project tracking, a report development processes, strategic direction setting, and training.
- Project advisor for a management review that addressed project design, construction, and maintenance for the City of Bellevue, Wash. The key issues evaluated included the organizational, management and control, accountability structures required to deliver projects in scope, on schedule, on budget, and in a manner that reflects community issues and concerns.
- Assisted the California Department of Transportation (Caltrans) in replacing its existing project management system. Responsibilities included providing oversight and advisory services during the evaluation of vendor applications and their implementation.
- Project manager for ODOT. Provided quality assurance for the PS&D process. Reviewed current project management systems and proposed enhancements. Evaluated functional and technology direction for the systems. Assessed needed system changes and procedures to support full lifecycle project management.
- Provided advice on re-engineering the Texas Department of Transportation's planning and programming processes. This involved evaluating the proposed "to be" processes, and the business improvement projects and implementation plan.
- Project director for development and implementation of performance-based

maintenance management processes for the Arizona Department of Transportation (ADOT), Washington State Department of Transportation, and King County, Washington.

- Project director for financial management feasibility studies for ADOT and the Montana Department of Transportation.

### 3. Wendell Point, Senior Consultant

Mr. Point, a senior consultant with Dye Management Group, Inc., will assist Mr. Cooney with the conduct of project activities including the documentation of the existing UDOT environment, and the planning and conduct of the best practices reviews of transportation agencies and engineering firms. Mr. Point will also assist in the benchmarking of UDOT against the identified best practices and the development of the final report.

Mr. Point has more than 13 years experience working with transportation agencies, including more than 10 years of experience in a variety of management roles in the Finance and Maintenance divisions of the Virginia Department of Transportation (VDOT). Mr. Point's experience most directly related to his proposed role on this project includes the following:

- Business analyst responsible for documenting current processes as part of the project development systems assessment for CDOT. Mr. Point's role includes assisting with the inventory of current systems, and the gathering and documentation of business requirements for the various project development systems.
- Lead analyst responsible for identifying best practices and level of service approaches, methodologies, and work standards for project managers as part of an organizational assessment and benchmarking study of FHWA's Western Federal Lands project delivery unit.
- Lead analyst responsible for research into actual versus planned schedule and budget performance for pre-construction functions as part of a project delivery study in North Carolina.
- Lead analyst for an A/E best practices review for ODOT. This analysis via quantitative and qualitative research methods will be used by ODOT to develop A/E contracting materials for use in A/E contract negotiations and in establishing A/E contract parameters, as well as to develop a comprehensive statewide negotiation process.
- Planning, budget, and evaluation manager for the maintenance program at VDOT. In this role, Mr. Point developed and administered the maintenance program's \$760 million annual statewide budget.
- Financial services specialist for VDOT. In this role, Mr. Point worked directly

with the chief financial officer to re-engineer financial and contract management procedures, processes, and policies. He also maintained responsibility for documenting agency-wide policies and procedures relative to budget development, financial reporting, contract execution, and project management.

#### **4. Tom Crawford, Senior Consultant**

Mr. Tom Crawford will assist Mr. Cooney and Mr. Point with conducting the detailed interviews, performing the best practices reviews, benchmarking, developing detailed recommendations, and preparing the implementation plan. Mr. Crawford's will focus most specifically on technology and integration issues.

Mr. Crawford, a Senior Consultant with Dye Management Group, Inc. has over 20 years of management consulting and information technology experience. Mr. Crawford's range of experience includes project management, functional and systems analysis, data architecture development, systems requirements development, full lifecycle systems development, and business process redesign. Mr. Crawford has designed and delivered training courses for business and technical managers and staff, and facilitated system planning and requirements development sessions.

His experience most directly relevant to the proposed scope of work for UDOT includes:

- Project Manager for Montana Department of Transportation (MDT), Highway Infrastructure Data Inventory and Needs Project. Mr. Crawford led the development of an enhanced data dictionary for data about Montana's highway inventory. He assessed data needs, issues and current management practices and recommended a strategy and "next steps" implementation plan for establishing a data resource management program for the department; including needed policies, procedures, standards, and tools. Mr. Crawford also identified specific system and process improvements to provide efficiency improvements and cost savings to the department.
- Business process analyst responsible for a review of the North Carolina Department of Transportation's (NCDOT) environmental review and permitting process. In this role, Mr. Crawford assessed the current processes surrounding development, review and approval of environmental permits for NCDOT's large and small highway construction projects. This included interviewing NCDOT management and staff, in addition to representatives of partner agencies, and reviewing available process documentation. Tom's assessment included a set of recommendations for improving these processes.
- Business analyst responsible for developing costs and benefits for consumable inventory system feasibility study for the Washington Department of Transportation (WSDOT). Mr. Crawford's duties included reviewing current



architecture, and developing costs for best of breed and ERP purchased package system alternatives for the feasibility study.

- Project leader for providing metadata modeling and data architecture consulting for WSDOT. The scope of this project includes providing guidance and direction to WSDOT on conducting enterprise data modeling and assisting WSDOT to analyze its current enterprise database content and structures with the goal of establishing an enterprise wide data model for WSDOT.

## D. Proposed Project Schedule

Exhibit I-2 provides Dye Management Group, Inc.'s proposed project schedule. This proposed schedule is based on the following assumptions:

- Initiation of the review on or about Oct. 11, 2004, and completion by Dec. 31, 2004.
- UDOT review and comment on deliverables within five business days of receipt.
- UDOT confining second and subsequent reviews of deliverables to determining whether points that were previously raised have been addressed, with no new points introduced on second and subsequent reviews.
- Participation by UDOT staff at levels and timeframes mutually agreed to in the detailed work plan to be finalized during the project initiation task.

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**Exhibit I-2: Proposed Project Schedule**

	2004	
	OCT	NOV
	DEC	
Task 1: Initiate Project		
Task 2: Establish Baseline of Current Environment and Identify Desired Business Objectives		
Task 3: Benchmark UDOT Operations and Objectives Against Best Practices		
Task 4: Develop Recommendations		
Task 5: Prepare Implementation Plan		
Task 6: Prepare Draft and Final Report		
Task 7: Perform Project Management		

## DYE MANAGEMENT GROUP, INC.

## E. Proposed Staff Loading

Our proposed staffing loading for this project is provided in Exhibit I-3.

**Exhibit I-3: Proposed Staff Loading**

Task	Dye	Cooney	Point/ Crawford	Research Analyst	Admin	Total
Task 1: Initiate Project	2	8	0	0	4	14
Task 2: Establish Baseline of Current Environment and Identify Desired Business Objectives	2	16	96	80		194
Task 3: Benchmark UDOT Operations and Objectives Against Best Practices	2	16	64	64		146
Task 4: Develop Recommendations	4	20	80	0		120
Task 5: Prepare Implementation Plan		8	48		16	64
Task 6: Prepare Final Report and Conduct Management Briefing	4	4	24		8	54
Task 7: Perform Project Management	0	8			24	14
					4	
Project Total	14	80	312	144	56	606

## F. Quality Control and Quality Assurance Plan

Dye Management Group, Inc. has integrated quality control and quality assurance activities across the proposed project work plan.

Quality control activities include:

- Ongoing monitoring of project progress and potential project risk areas by the Dye Management Group, Inc. Project Manager (Robert Cooney) and Project Advisor (Bill Dye) to ensure work is being delivered consistent with project scope, schedule

and budget, as well as firm and industry standards.

- Internal peer review of deliverables where appropriate.
- Review of all project deliverables by the Project Manager or Project Advisor before submission to UDOT.

Quality Assurance activities include:

- Two (2) structured reviews of project status by the Project Manager and Project Advisor. At least one of these reviews will be conducted on-site and will include meetings with UDOT team members and UDOT management to gain insight concerning the overall status of the project. This review is expected to occur during or at the conclusion of Task 4: Develop Recommendations.

## DYE MANAGEMENT GROUP, INC.

## II. Pricing Proposal



This section presents our proposed cost/price proposal. Dye Management Group Inc.'s estimate for completing the scope of work as defined in the technical proposal is \$73,486 including expenses as outlined in Exhibit II-1 below.

### Exhibit II-1: Dye Management Group, Inc. Cost Estimate

Professional Services	\$63,350
Travel Expenses at 16%	\$10,136
Total Estimated Cost	<hr/> \$73,486

This price proposal is based on the following assumptions:

- Staff loading as outlined in the technical proposal and summarized in Exhibit I-3.
- Pricing per task and per staff member as outlined in Exhibit II-2; rates applied are consistent with those in Attachment C of the Performance Audit contract.
- Actual time will be invoiced monthly on a time and material basis.
- Invoices are due and payable within 30 days of receipt.
- Expenses are a maximum, not-to-exceed estimate; actual expenses will be invoiced monthly as incurred.
- Project work will be performed at Dye Management Group, Inc. offices to the extent possible to minimize expenses. Expenses have been included for travel to conduct detailed interviews to confirm the existing environment and understand UDOT business objectives and provide management briefings at several points during the project.

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## Exhibit II-2: Pricing by Assigned Staff and Task

Task	Dye	Cooney	Point/Crawford	Research TBD	Admin TBD	Total	Total
Classification	President	Vice President	Senior Consultant	Associate Consultant	Admin Support	Hrs	Fees
Rate Per Attachment C of Contract	\$225	\$205	\$100	\$70	\$45		
Task 1: Initiate Project	2	8	0	0	4	14	\$2,270
Task 2: Establish Baseline of Current Environment and Identify Desired Business Objectives	2	16	96	80	0	194	18,930
Task 3: Benchmark UDOT Operations and Objectives Against Best Practices	2	16	64	64	0	146	14,610
Task 4: Develop Recommendations	4	20	80	0	16	120	13,720
Task 5: Prepare Implementation Plan		8	48	0	8	64	6,800
Task 6: Prepare Final Report and Conduct Management Briefing	4	4	24	0	24	56	5,200
Task 7: Perform Project Management	0	8		0	4	12	1,820
Project Total	14	80	312	144	56	606	
Fees by Assigned Staff	\$3,150	\$16,400	\$31,200	\$10,080	\$2,520		\$63,350

### III. Past Performance



The following project summaries present a sample of our past experience that illustrates the Dye Management Group, Inc. team's preeminent qualifications to conduct a review of UDOT's electronic collaboration and data sharing with its engineering partners. These project summaries have been divided into the key skill areas required for successful delivery of this study including:

- Project delivery performance audit, process improvement, and best practices study experience.
- Knowledge of UDOT's environment.
- Additional performance audit and management review experience.

#### A. Project Delivery Performance Audit, Process Improvement, and Best Practices Study Experience

Our team has considerable experience in conducting project delivery performance audits, best practices studies, and process improvement engagements. Representative engagements include the following projects.

##### 1. Colorado Department of Transportation: Project Development Systems Assessment

Dye Management Group, Inc. assisted CDOT in conducting a comprehensive assessment of the application systems that support the project delivery processes within CDOT. The scope of the project included the application systems supporting the project selection, planning, design, pre-construction (bidding/letting/award), construction, and maintenance functions. Project tasks included conducting an inventory of current application systems, identifying user requirements for these application areas through a series of focus groups at headquarters and in regional offices, conducting a best practices survey of other transportation agencies and engineering firms to understand the state of the practice in the various areas, comparing CDOT systems and processes against best practices then developing a series of recommendations for each area, and defining an implementation plan with recommended project sequencings to implement the recommendations.

##### 2. North Carolina Project Delivery Study

Dye Management Group, Inc. recently completed, in the summer of 2004, a study of

project delivery practices in North Carolina to analyze, assess, and quantify the extent of project delay. The study included all aspects of project delivery from project definition, planning, project development, and design, through construction. Key areas of focus included how to more effectively link planning, programming, and project development; environmental streamlining opportunities; the effects of secondary and cumulative impacts on project delivery; approaches for improving the overall predictability of the project delivery schedule; and opportunities for growing project management capabilities. In addition, the scope of effort included a review of the multi-agency collaborative review process (known as Merger 01) that has been implemented to streamline the environmental review and permitting processes in North Carolina.

A critical component of the project included a qualitative review of best practices nationally and comparison of North Carolina processes against national standards. The scope of work also included a quantitative benchmarking of North Carolina project delivery performance against national standards and other transportation agencies.

### **3. Management Review of Kentucky Transportation Cabinet**

Dye Management Group, Inc. conducted a comprehensive management review of the Kentucky Transportation Cabinet (KYTC) for the Legislative Research Commission of the Kentucky General Assembly. The management review of KYTC focused on all areas of department operations including planning, programming, environmental streamlining, revenue forecasting, funding, project delivery practices, and management of all of KYTC's assets. The study also provided a comprehensive assessment of KYTC's information technology environment including key management systems supporting all aspects of the transportation lifecycle. A major component of this project effort was a comprehensive best practices review and a comparison of KYTC's operations in all areas against best practices nationally.

### **4. Arizona Department of Transportation: Recommendations for Best Project Management Practices**

Dye Management Group, Inc. conducted a comprehensive evaluation of ADOT's current project delivery practices, identified which practices are most problematic, are of critical importance, identified best project management and delivery practices used by other public and private construction enterprises, and made recommendations for improving the delivery of projects as well as reducing the overall cycle time required to identify, plan, design, and deliver capital projects. This major research study included a detailed best practices review of other state departments of transportation and private sector engineering firms.



## **5. Oregon Department of Transportation A/E Best Practices Review**

Dye Management Group, Inc. is currently conducting an A/E best practices review for the Oregon Department of Transportation (ODOT). The analysis via quantitative and qualitative research methods will identify the A/E contract type used (such as fixed fee, lump sum, time, and materials) by state and federal agencies; determine fixed or upper limitations on A/E contractor overhead, wage rates, and profit; identify A/E practices used for state financed projects versus federally funded projects; and identify specified job classifications and wage ranges that are used on A/E consulting contracts. The recommendations from this best practices research will be used by ODOT to develop A/E contracting materials for use in A/E contract negotiations, in establishing A/E contract parameters, as well as to develop a comprehensive statewide negotiation process.

## **6. Federal Lands Highway Division Management Information Systems Plan**

Dye Management Group, Inc. recently completed the definition of an information systems plan and development of the conceptual design of a Management Information System or business warehouse for the FHWA Federal Lands Highway, including the headquarters function and the three operating divisions. The scope of the project included reviewing all existing management systems supporting FLH project delivery efforts across the transportation lifecycle, analyzing the enterprise information needs of FLH and its partner agencies, analyzing best practices nationally, and conducting a fit/gap analysis against FLH's current information systems. The study recommended significant enhancements to FLH's management information capabilities in support of project delivery.

## **7. Western Federal Lands Highway Division: Project Delivery Organizational Improvement**

Dye Management Group, Inc. assisted the Western Federal Lands Highway Division (WFLHD) in evaluating its project manager structure and practices, and identifying needs and opportunities for improvement. Dye Management Group, Inc. evaluated background information to include the WFLHD business plan, organizational structure, program of projects, and benchmarking studies. The study included benchmarking the Western Division against the Eastern and Central Divisions. This was accomplished through conducting site visits, interviews, and focus groups, and reviewing background information from these divisions. Dye Management Group, Inc. then prepared a final report that documented the work done, described the need for change, presented an analysis of new data, described alternatives for change, and recommended preferred alternatives. .

## **8. Montana Legislative Auditor: Project Delivery Performance Audit of Montana Department of Transportation**

Dye Management Group, Inc. assessed the performance of current project delivery processes and practices for the Legislative Auditor. A sophisticated quantitative and qualitative assessment of project delivery performance was undertaken. The purpose of the study was to identify opportunities for reducing the time it takes from programming a project through to advertisement. Specific attention was focused on the environmental process, right-of-way relocation, utility clearance, survey work, and project management procedures. Program-level data regarding project scope, schedule, budget, quality, and performance was collected and analyzed. Dye Management Group, Inc. evaluated management accountability for project scope, budget, schedule management; analyzed related project management practices and processes; and made recommendations for improvement.

## **9. FHWA Federal Lands Highway Project Delivery Client Satisfaction Surveys**

The scope of this work includes assisting FLH with improving its existing client satisfaction surveys, migrating all of FLH's surveys to the Web, compiling and analyzing results, preparing summary reports, and developing recommendations for management action based on the survey results. The project also includes compiling and analyzing approximately two years of backlog for two types of surveys. The scope of work includes the program administration survey for division offices and partner agencies; the project development Survey that is completed by partner agencies and other interested external parties at the completion of the design phase; the completed project survey, which is completed by partner agencies and other interested parties at the end of the construction phase; and a new environmental streamlining survey.

## **10. Texas Department of Transportation: Planning and Programming Business Process Re-engineering**

Dye Management Group Inc. assisted the Texas Department of Transportation (TxDOT) in re-engineering its transportation planning and programming processes. This involved evaluating how transportation planning had been undertaken, and determining how it should be performed to best manage and develop the transportation system. We analyzed current business processes and designed new processes. This included evaluating the analytical methods and planning techniques used, and benchmarking against best practices. The results from our work define the technical approach, analytical procedures, and processes that TxDOT will institutionalize for

ongoing planning and management of the transportation system.

#### **11. Oregon Department of Transportation: Review of Project Management Systems as Part of Business Process Re-engineering**

Dye Management Group, Inc. reviewed existing project management systems and proposed enhancements as part of an assessment of a business process re-engineering project. We evaluated functional and technology direction for the systems, assessed needed system changes, and analyzed procedures to support full lifecycle project management.

#### **12. California Department of Transportation: Continuous Improvement Studies Project**

Dye Management Group, Inc. assisted Caltrans in developing quality teams to review Caltrans' road and roadside design specifications, details, construction implementation, internal policies, and project development procedures. We also assisted in making improvements within the project development, construction, maintenance, and environmental programs for better design and stewardship of highway corridors. The firm's role included development and facilitation of committees, and the production of standards and details for possible incorporation into the highway design manual.

#### **13. Oregon Department of Transportation: Management Review of the Construction and Maintenance Programs**

Dye Management Group, Inc. assisted ODOT in a comprehensive evaluation of its core business lines. The review included a detailed evaluation of all design functions and costs, and a comparison of in-house and consultant project design costs using data from ODOT's financial, project monitoring, contractor payment, and other information systems. The review resulted in a series of recommendations designed to make ODOT's entire project development, design, and construction process more cost-effective; provide better information for decisions to carry out work in-house or through a contractor; and improve the accountability of both in-house staff and contractors.

#### **14. Oregon Department of Transportation: Project Development Manual**

Dye Management Group, Inc. assisted ODOT in documenting its project delivery process. The result was a manual addressing fundamental activity and logic network, phases and process plan, functional units and their products, and procedures for steps in the project delivery process.

### **15. Oregon Department of Transportation: Performance Review and Implementation Assistance for the Oregon Department of Transportation Unified Work Program**

Unified Work Program (UWP) projects were designed to improve ODOT's project delivery process, support integration of ISTE management systems, integrate a community-solutions-based process into ODOT's planning efforts, and improve the consistency of ODOT's public involvement efforts. Dye Management Group, Inc. undertook a quality assurance audit and provided implementation assistance for the UWP. Responsibilities included evaluating the implementation approach and status of each project to determine the resources and technology support required to successfully implement and maintain these projects. The work also included an analysis of the organizational structure supporting these functions and recommendations for improving accountability.

### **16. Oregon Department of Transportation: Project Selection and Development Process Improvement Implementation**

Dye Management Group, Inc. was selected to provide quality assurance and implementation assistance for ODOT's improved project selection and development process. Our role included evaluating the redesigned processes, preparing an implementation plan, guiding implementation, and defining the information technology requirements for improving the process. Among the issues we addressed were outcome-based performance measures for the new process.

### **17. City of Bellevue, Wash., Department of Transportation: Management Review**

Dye Management Group, Inc. completed a management review that addressed project design, construction, and maintenance for the City of Bellevue. The key issues evaluated included the organizational, management and control, and accountability structures required to deliver projects in scope, on schedule and within budget, and in a manner that reflects community issues and concerns. The project addressed the application of design standards and consultant management.

### **18. King County, Wash., Department of Transportation, Road Services Division: Project Management Approach Development**

Dye Management Group, Inc. used a best practices assessment of public and private organizations that successfully manage transportation projects to identify a revised project management approach for the organization. To support the revised approach,

key project management roles and responsibilities were identified, and a comprehensive manual was developed. Related training for project managers was also conducted.

## **19. City of Portland, Ore.: Alternative Project Delivery System Models**

Dye Management Group, Inc. provided assistance in evaluating alternative project delivery models for CIP projects. We used work sessions and interviews with key staff to develop and assess the models. The impact of each model on current business operation was illustrated. Criteria and success factors were developed and used to make recommendations for the adoption of specific models.

## **B. Track Record of Successful Performance with UDOT**

Our proposed team has a successful track record of performance with UDOT on a number of performance audits and other related engagements.

### **1. Utah Department of Transportation: Design Process Performance Audit**

Dye Management Group, Inc. completed a performance audit of UDOT's pre-construction process, covering the concept development, design, and PS&E phases of a project. The audit included an evaluation of existing guidelines and procedures, a review of the technology support available, and an examination of staffing levels and skills. The audit specifically evaluated environmental clearance, right-of-way acquisition, development of utility and railroad agreements, and the review steps built into the three phases of the entire design process. The project developed recommendations for streamlining existing guidelines and procedures, outlined technology and staffing requirements, and identified performance measures that will track future performance.

### **2. Utah Department of Transportation: Development of a Project Manager Function**

Dye Management Group, Inc. assisted UDOT in improving project management procedures for design and construction. A team developed and implemented a cradle-to-grave project management function. This multi-year project evaluated existing project management procedures and support tools, and provided the mechanisms, tools, and procedures required to ensure project continuity from the initial design concept through all pre-construction phases to letting construction.

### **3. Utah Department of Transportation: Statewide Planning and Programming Assessment**

Dye Management Group, Inc. evaluated UDOT's entire planning and programming function. This far-reaching review included determining the extent to which Utah's planning conformed to industry best practices. The results from the assessment provided the basis for a series of improvements to the planning process. Our role included working closely with executive management and providing implementation assistance for the recommendations developed in the assessment.

### **4. Utah Department of Transportation: Performance Audit of UDOT's Maintenance Activities**

Dye Management Group, Inc. is conducting a performance audit on the UDOT maintenance function. The audit involves identifying key issues; evaluating maintenance planning support activities; benchmarking maintenance against best management practices; establishing evaluation criteria and user requirements; evaluating accuracy of data; ensuring the system's functionality; and recommending modifications. The project also includes recommending improvement in the following areas:

- Central Maintenance Unit activities.
- Central Maintenance Unit support of the Region Maintenance Units.
- The Maintenance Management Quality Assurance Program (MMQA).
- Region Maintenance Unit organization and activities.
- Allocation of resources among regions and stations.
- Maintenance station location, standards, and practices.
- Maintenance Management System (MMS).

### **5. Utah Department of Transportation: Review of Cash Management Procedures**

Dye Management Group, Inc. conducted an evaluation of UDOT's cash management practices. This included an assessment of best practices. Recommendations addressed the issue of developing project delivery program budgets based upon establishing a biennial letting schedule by quarter and determining the cash management impacts of the pre-construction and construction schedule.

## **6. Utah Department of Transportation: Administrative Function Performance Review**

The engagement covered all secretarial, accounting, and budgeting functions carried out at UDOT headquarters. Dye Management Group, Inc. evaluated existing procedures and guidelines, staffing levels and structure, and the information systems supporting the administrative functions. From the analysis, we developed recommendations for improving the efficiency, quality, and timeliness of services. Part of this effort was to determine the potential for changes to the organizational structure of administrative functions and a reduction in staffing levels.

## **7. Utah Department of Transportation: Performance Audit of Project and Administrative Charges Management**

Dye Management Group, Inc. assisted UDOT in evaluating and improving the performance, accountability, and comparability of project and administrative charges and their management. This included an analysis and review of current policies, standards, processes, and systems supporting UDOT's management of its project and administrative charges. As part of the project, we evaluated the current cost structure and allocation methodology, and related automated management systems and budgeting, and financial systems and methodologies. We then benchmarked against other states. The final product was a set of recommendations that will strengthen UDOT's ability to identify, manage, measure, compare its project and administrative charges, and increase the productivity of its cost accounting functions.

## **C. Other Performance Audit and Management Review Experience**

In addition to our project-delivery-specific experience, Dye Management Group, Inc. has also conducted a number of other management reviews and/or performance audits for transportation and other public sector agencies.

### **1. North Carolina General Assembly: Cash Management Review of the North Carolina Department of Transportation**

Dye Management Group, Inc. evaluated cash management practices in the North Carolina Department of Transportation for the North Carolina General Assembly. The existing situation was an unresolved conflict between an increase in cash balances and a backlog of construction project and maintenance needs. Our study eventually established a proactive cash management approach, as well as provided policymakers with the assurance that North Carolina Department of Transportation management is using transportation revenues in the most cost-effective way to accelerate and deliver

transportation projects.

**2. Oregon Department of Transportation: Accounting Compliance Management Audit**

Dye Management Group, Inc., in conjunction with a leading accounting firm, conducted a management level review to evaluate the Oregon Department of Transportation's compliance with state constitutional requirements that highway user fees are only spent on highway projects. The management audit involved evaluating the management and control structures, budgeted and actual expenditures, and testing expenditures charged to a sample of construction and non-construction projects.

**3. Oregon Department of Administrative Services: Business Process Review/Requirement Definition for Capital Budgeting and Other Functions**

Dye Management Group, Inc. conducted a business process review of capital and operating budgeting processes, defined information requirements for new information systems, and recommended an approach for performance measures to be incorporated in capital project development processes.

**4. State of Oregon, Office of the Secretary of State: Department of Corrections, Change Order Audit**

Dye Management Group, Inc. managed a project to review change order and subcontractor bidding processes for two major prison construction projects, using Generally Accepted Government Audit Standards. This review assessed the use of construction management controls and approaches, and provided recommendations for project management improvement. Interviews were held and extensive data collection and analysis performed. The project findings have been submitted to the Oregon Legislature.

**5. Washington House of Representatives: Asset Management Procedures and Guidelines**

Dye Management Group, Inc. carried out a review of existing procedures and guidelines for asset management. Our team analyzed the roles and responsibilities of Washington House staff in purchasing, maintaining, and surplussing House assets. Based on this analysis, we developed new, streamlined guidelines and procedures for asset management, and we clarified the roles and responsibilities of House staff regarding managing assets.